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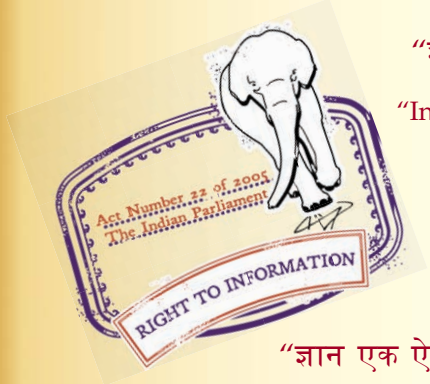
IS 5038 (1969): Specification for Ice Cube Trays for Domestic Refrigerators [MED 3: Refrigeration and Air Conditioning]



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IS : 5038 - 1969
(Reaffirmed 2001)

Indian Standard

SPECIFICATION FOR ICE CUBE TRAYS FOR DOMESTIC REFRIGERATORS

(First Reprint DECEMBER 1983)

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INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

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July 1969

Indian Standard

SPECIFICATION FOR ICE CUBE TRAYS FOR DOMESTIC REFRIGERATORS

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Indian Standard

SPECIFICATION FOR ICE CUBE TRAYS FOR DOMESTIC REFRIGERATORS

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 31 March 1969, after the draft finalized by the Air Conditioning and Refrigeration Sectional Committee had been approved by the Mechanical Engineering Division Council.

0.2 The manufacture of domestic refrigerators has advanced rapidly since 1953 and at the present day, almost all the components including hermetically-sealed compressors, controls and other accessories are being indigenously manufactured. It is necessary that the indigenously manufactured items should conform to the required standard specifications and hence, the purpose of this standard is to specify the essential dimensions of the ice cube trays for domestic refrigerators.

0.3 Because of the many different sizes of ice cube trays manufactured in the country, the need for rationalization has been keenly felt and this standard, therefore, deals only with two popular sizes of ice cube trays.

0.4 In the preparation of this standard, assistance has been derived from DIN 8940 : 1956 'Wurfeleisschalen fur Haushalts-Kuhlschranke (Ice cube trays for domestic refrigerators)' issued by the Deutscher Normenausschuss.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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1. SCOPE

1.1 This standard specifies the essential dimensions of ice cube trays complete with grids for domestic refrigerators.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definition shall apply.

*Rules for rounding off numerical values (*revised*).

2.1 Grid — Frame work used for separating the ice cubes formed in the tray.

3. DIMENSIONS AND TOLERANCES

3.1 The main dimensions with their tolerances for ice cube trays of nominal sizes 0·25 and 0·70 litres shall be as shown in Table 1.

3.1.1 The illustration is diagrammatic only and is not intended to illustrate the details of design.

4. MATERIAL

4.1 The material used in the manufacture of ice cube trays and grids shall be as follows:

a) Aluminium—conforming to Designation A-0 or A-18 of IS : 617-1959*.

b) High density polyethylene or any other suitable plastic material.

4.2 When the trays and grids are made of material mentioned in **4.1** (b), the water in the tray shall be chemically and biologically safe for human consumption.

5. FINISH

5.1 Ice cube trays shall have anodized finish and shall be free from blowholes, cracks, shrinks and other surface defects.

5.2 The anodizing shall conform to Grade A of IS : 1868-1961†.

5.3 The design of the ice cube trays shall be such that it is easy to clean and prevent accumulation of dirt.

6. SAMPLING

6.1 Lot — In any consignment all the trays of the same nominal size and manufactured from the same material under essentially similar condition of production shall be grouped together to constitute a lot.

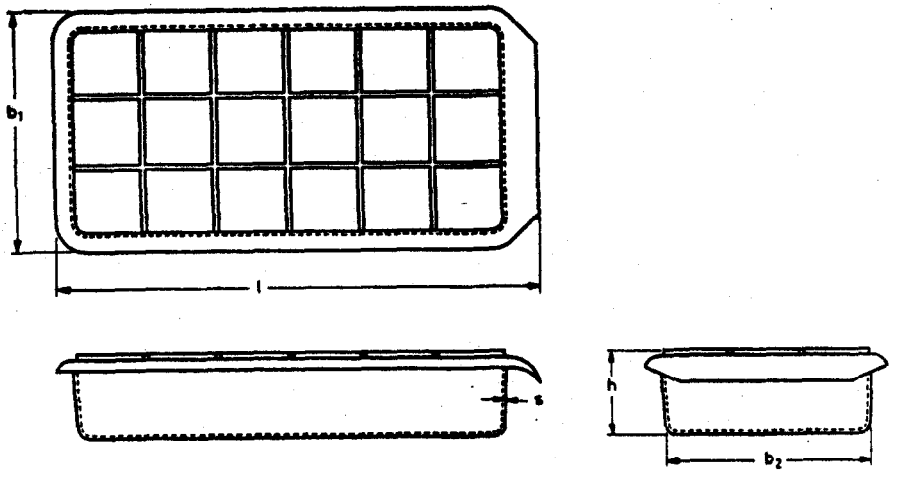
6.2 For ascertaining the conformity of the lot to the requirements of the specification, samples shall be selected and tested for each lot separately. The number of trays to be selected at random for this purpose shall be in accordance with col 1 and 2 of Table 2.

*Specification for aluminium and aluminium alloy ingots and castings for general engineering purposes (*revised*).

†Specification for anodized aluminium.

TABLE 1 DIMENSIONS FOR ICE CUBE TRAYS

All dimensions in millimetres.



NOMINAL SIZE (LITRE)	l	b_1	b_2	h	s*	WATER CONTENT WITH THE GRID IN POSITION (LITRE)	QUANTITY OF ICE OBTAINABLE IN kg
0·25	160^{+0}_{-3}	80^{+0}_{-2}	70^{+0}_{-2}	28^{+0}_{-2}	$0{\cdot}8^{+0}_{-0{\cdot}1}$	$0{\cdot}25^{+0{\cdot}03}_{-0}$	0·2
0·70	280^{+0}_{-5}	110^{+0}_{-5}	94^{+0}_{-3}	36^{+0}_{-2}	$1{\cdot}0^{+0}_{-0{\cdot}1}$	$0{\cdot}70^{+0{\cdot}1}_{-0}$	0·5

*The thickness specified is for aluminium trays and grids whereas the thickness of trays and grids made of plastic shall be subject to an agreement between the purchaser and the manufacturer.

TABLE 2 SAMPLE SIZE AND CRITERIA FOR CONFORMITY

(*Clause* 6.2)

Number of Trays in the Lot	Number of Trays to be Selected in the Sample	Permissible Number of Defectives
(1)	(2)	(3)
Up to 100	8	0
101 „ 150	13	0
151 „ 300	20	1
301 „ 500	32	2
501 „ 1 000	50	3
1 001 „ 3 000	80	5
3 001 and above	125	7

6.3 The trays for the sample shall be selected at random from the lot. In order to ensure the randomness of selection, suitable random number tables shall be used. In case such tables are not available, the following procedure for selection may be adopted:

Starting from any tray in the lot, count them in one order as 1, 2, 3, ... up to r and so on, where r is the integral part of N/n (N being the lot size and n the sample size). Every rth tray thus counted shall be selected to constitute the sample.

6.4 Number of Tests and Criteria for Conformity — The trays selected according to **6.2** and **6.3** shall be examined for dimensions and tolerances (*see* **3.1**) and finish (*see* **5**). The lot shall be considered as having satisfied the requirements of the specification, if the number of trays failing to meet the requirements of any one or more of the characteristics, is less than or equal to the permissible number of defectives given in col 3 of Table 2.

7. MARKING

7.1 Each ice cube tray shall be legibly marked on the outside surface with the manufacturer's name or recognised trade-mark and with a figure indicating the size of the ice cube tray in litres.

7.1.1 Ice cube trays may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

AMENDMENT NO. 1 DECEMBER 1972
TO
IS : 5038-1969 SPECIFICATION FOR ICE CUBE TRAYS FOR DOMESTIC REFRIGERATORS

Alteration

(*Page* 5, *Table* 1) — Substitute the following for the existing table retaining the existing figures and the foot-note with (*) mark:

Nominal Size (Litre)	l	b_1	b_2	h	s*	Water Content With The Grid in Position (Litre)	Quantity of Ice Obtainable (kg)
0·25	$161 \pm 1{\cdot}5$	86 ± 1	73 ± 1	29 ± 1	1 (for tray) 1·6 (for grid)	$0{\cdot}25 \begin{smallmatrix} +0{\cdot}03 \\ -0 \end{smallmatrix}$	0·2
0·70	$280 \pm 2{\cdot}5$	$112 \pm 2{\cdot}5$	$94 \pm 1{\cdot}5$	36 ± 1	1·2 (for tray) 1·6 (for grid)	$0{\cdot}70 \begin{smallmatrix} +0{\cdot}1 \\ -0 \end{smallmatrix}$	0·5

(EDC 66)